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ABSTRACT

The contribution of liberal education to teacher preparation goes far beyond the simple notion of subject matter mastery. An analysis of the concept of pedagogy, combined with research about teachers and teaching and an awareness of the social conditions of teaching, can be used to construct a compelling case for a wide-ranging contribution of liberal education to teacher preparation. Even methods courses can be improved by appropriate contributions from the liberal arts and sciences. Liberal education may contribute to teacher preparation in four major areas: (1) general education; (2) higher order skills such as inquiry, critical analysis, and decision making; (3) traditional content areas; and (4) teaching methods. Cooperative efforts of liberal arts faculties and professional educators are needed to design programs of teacher preparation. (CB)

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TEACHER EDUCATION AND THE LIBERAL ARTS

Report of the Task Force of the Association of Colleges and Schools of Education in State Universities and Land Grant Colleges and Affiliated Private Universities

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An Occasional Paper of the Association of Colleges and Schools of Education in State Universities and Land Grant Colleges and Affiliated Private Universities

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TEACHER EDUCATION AND THE LIBERAL ARTS

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What should be the role of liberal education in teacher education programs? Clearly teachers must know what they teach. But how much biology should a high school biology teacher know? How much course work in English literature does an elementary school teacher need to be able to teach writing? What would an appropriate academic major be for an elementary teacher? Learning to read is one of the key goals of elementary education, yet no liberal arts department of reading exists. Nor do we know of a single college English or linguistics department that teaches the content of reading.

When one moves beyond subject matter competence, the questions become even more complex. Who is responsible for the misspelled words and poor grammar in the teacher's letter home to the parents--the college of education, the English department, or the teachers themselves? Is it the responsibility of the liberal education portion of a teacher education program to instill within a would-be teacher the inquiring, adaptive spirit needed for life-long professional development?

If teachers are to be more than mere technicians, faithfully following a "teacher-proof" curriculum, then professional skills of problem-solving, analysis, and critical thought are needed. These are precisely the outcomes intended of a liberal education. How, if at all, can such liberal education goals be pursued in the context of professional teacher preparation? Is the sometimes meager general education background of other professionals such as doctors and engineers enough for teachers?

To what extent should a teacher be liberally educated? Our contention is that, among the professions, teaching has perhaps the strongest connection to the liberal arts. Teachers have no less a responsibility than to induct young people into our society and culture. The disciplines associated with liberal education are strong reflections of that society and culture, and the teacher is, along with the family, the church, and the media, one of the most powerful transmitters of the values and norms of our society.

But the case for the liberal arts in teacher preparation extends beyond the natural linkage provided by the fact that teachers are major transmitters of culture. The liberal arts also contribute to the professional qualifications of teaching. The issue here is not professional education versus liberal education. Rather the issue is whether we want liberal-professional education that favors high levels of conceptual skills and application or technical-professional education that favors prescriptive knowledge and narrow skill performance. One of the greatest impediments to teaching is the use of minute, technical, competency-based approaches in preparation and certification that attempt to reduce the art of teaching to mundane, mechanical processes.

Such treatment serves only to trivialize that which is complex and of ultimate importance.

Contrary to the notion of teacher as technician, the image emerging in the literature portrays the teacher as a critical problem-solving professional. From B. O. Smith's, A Design for a School of Pedagogy (1980) to David Berliner's work on teacher effectiveness (Berliner, 1984); from Hendrik Gideonse's calls for a revolution in teacher education (Gideonse, 1984) to Judy Lanier's research on teacher preparation (Lanier, 1984), the teacher is conceived of as a true professional. Recently, Lee Shulman (1986) has even argued that the teacher not only must know that something is the case, but also must understand why it is the case -- a level of understanding not often aimed at even in typical academic majors. Over the past ten years or so we have begun to understand what makes a good teacher, both conceptually and empirically, and now is the time to begin the implementation of this understanding in our teacher preparation programs.

At this point we must enter a caveat. Our view of the teacher as full professional depends upon the assumption that schools will continue to be organized much as they are now and that individual teachers will be expected to perform the range of duties typically expected of them. Working conditions in the profession are, unfortunately, ill-suited to attracting and retaining the type of individual who can meet the high expectations we will set forth. Moreover, a variety of proposals for radically different models of teaching in schools have been proposed; if implemented, some of these models could lead to differentiated staffing in which some "teachers" would be technicians. However, all such proposals of which we have knowledge have a central place for the fully

professional teacher. It is the fully professional teacher whom we will describe in the following.

With this caveat, the thesis is offered that the contribution of liberal education to teacher preparation goes far beyond the simple notion of subject matter mastery. Indeed an analysis of the concept of pedagogy, combined with research about teachers and teaching and an awareness of the social conditions of teaching, can be used to construct a compelling case for a wide-ranging contribution of liberal education to teacher preparation. Even that most often criticized part of teacher preparation-- the methods course--can be improved by appropriate contributions from the liberal arts and sciences.

Before proceeding further, we need to clarify our perspective on teaching. Teaching involves:

a) the intentional use of a variety of communicative strategies

b) to make a body of knowledge, set of skills, or group of character traits deemed valuable

c) accessible to student inquiry and learning.

Doubtless, something is included in this definition that is objectionable to someone, and perhaps something is left out that should be included. Nevertheless, the components at least touch on most of what we have come to understand from our conceptual and empirical inquiries into the conditions and techniques of teaching and learning in complex social settings. This view of teaching suggests that liberal education may contribute to teacher preparation in four major areas: 1) general education; 2) higher order skills such as inquiry, critical analysis, and decision making; 3) the traditional content areas; and 4) methods of teaching.

GENERAL EDUCATION

The general education portion of a teacher preparation program serves four critical functions: extension and expansion of the knowledge base formed in high school, introduction to scientific and artistic modes of inquiry and expression, refinement and extension of personal and societal values, and cultivation of each student's ability to communicate in an informed and reflective manner--most particularly through writing. As is discussed later, the pedagogical portion of a teacher preparation program must include these same goals in its courses and fieldwork. More specifically, the general education of a teacher should include the following:

-Effective Communication. All teachers should be able to read, write, listen, and express themselves in a coherent and intelligible manner.

-Mathematics. All teachers should be able to comprehend and use fundamental mathematical concepts and operations to be able to keep records, perform data analyses, and carry out testing and evaluation.

-Scientific Understanding. All teachers should have a basic grasp of the major methods and results in the natural and social sciences and the technological implications of these results. We need not all be technicians, but our technological society demands at least a general appreciation of science and technology.

-Historical and Social Consciousness. All teachers should understand the ineluctable fact that both our individual and social experiences are historically grounded. To prepare students for a global perspective in the twenty-first century, teachers need a comprehensive background in the historical traditions shaping our society.

-Humanities. All teachers should appreciate the human condition as it is illuminated by language, literature, and philosophy, so that they may encourage their students to live full, meaningful lives.

In principle, these skills are advertised as goals of many programs of general education. They appear to be minimally necessary for every citizen, let alone teachers. Nevertheless, such general education typically has had one of the lowest priorities in our institutions of higher education. It is often ignored by senior professors and administrators, and viewed with suspicion by students with narrowly vocational interests. Worst of all, it is often widely assumed that a simple collection of introductory courses in the various major fields constitutes a general education. Introductory courses in any discipline are primarily designed for those who will major in that field. The idea that such courses will at the same time provide the basic skills for a generally educated student--whether prospective teacher or not--must be seriously questioned. The general education curriculum in our colleges and universities is largely chaotic, with the weak distribution requirements in place no substitute for a coherent course of study.

A number of scholars are beginning to recognize the inadequacy of general education as it is currently carried on in our nation's colleges and universities. For example, the NIE Study Group report, Involvement in Learning (1984) calls for renewed attention to providing a coherent general education for all students, whether they are prospective professionals or not. The report of the Association of American Colleges, Integrity in the College Curriculum: A Report to the Academic Community (1985) indicates the sorry state to which general education has fallen and urges a rededication to a coherent view of liberal

learning with a revitalized general education core. The design of a basic general education core within a coherent liberal arts curriculum is and must be the responsibility of all members of the university community. This is an area in which education faculty should work with other faculty to help weave a seamless web of education from the elementary grades through high school to college. Most observers believe that with proper design the general education portion of a coherent liberal arts curriculum could be accomplished in about two years of full-time study.

HIGHER ORDER SKILLS AND COMPETENCIES

Competent teachers must be multi-talented and extremely adaptive professionals. From motivation and discipline, to choice of curricular materials, instructional strategies, and organizational resources, the teacher must deal with an enormous array of contingencies. Has Johnny learned fractions? How much review of yesterday's lesson on geography is necessary? What items should be on the unit test? What reading group should Jane join? How can I motivate Susie to participate more? Are Richard's problems at home interfering with his ability to concentrate? What are the most likely misunderstandings students will have of the concept of work. These and a host of other questions must be answered by teachers each day. Can the liberal arts and sciences help?

In order to make these types of decisions and choices, teachers must be able to analyze a wide variety of situations in a way that leads to satisfactory formulation and solution of problems. They must learn to be critical, creative, and integrative thinkers, to transcend the narrow boundaries of disciplinary thought and to see things whole.

The most basic of all human characteristics is that of making and acting on choices. While the knowledge of concepts and skills derived from general education studies can inform choice-making, it is the continuous development of a value system in both its affective and cognitive dimensions that provides the cultural and personal meanings and justification for making choices. Without imposing any specific set of values, the teacher must be able to help students come to appreciate the values that shape their choices and decisions.

Teachers must also be committed to life-long learning, not only in their own lives, but also in the lives of their students. Teachers need to develop critical, inquiring minds in order to learn to adapt to constantly changing circumstances.

In addition to the somewhat abstract reasoning competencies just described, the traditional human traits so often associated with elementary and secondary teaching must not be ignored. Character, compassion, caring, and concern must also be acquired by would-be teachers. Although sometimes slighted in overly rationalistic descriptions of liberal education, historically these characteristics have been thought to be appropriate outcomes of a truly liberal education. They are certainly necessary for those to whom we entrust our young.

The cognitive and affective characteristics described above have long been espoused by advocates of liberal education. Typically, the assumption is made that these ends will be achieved almost as a by-product of taking the standard distribution requirements of an undergraduate degree. However, we do not believe these competencies will occur without explicit attention to their realization. For example, one of the key features in the modern mathematics curriculum is

the attempt to get students to pay attention to the "reasonableness" of the answers they get by algorithmic procedures. The ability to roughly estimate answers is essential to understanding mathematics and is part of critical thought in mathematics. Yet one finds little if any attention paid to estimation in typical college mathematics programs. A variety of courses and integrative experiences must be developed to address the goals of problem formulation and solution, critical thinking, ethical and social development, life-long learning, and human concern. New approaches are essential for all liberal arts graduates, but they must be given special focus and purpose in the context of professional teacher preparation.

The area of higher order skills contains a number of potential linkages with professional teacher preparation courses. Problem posing could be pursued in the context of the problems of teaching. The study of society in general could be exemplified by the study of the social, philosophical, and historical foundations of education--typically included in the professional component of teacher education. Ethics could be studied in terms of moral development, a subject often taught in schools of education. Standard logic courses in the liberal arts tend to stress the analysis of the structure of valid reasoning, while teachers tend to be more concerned with how to get people to think more effectively. By wedding logicians' interests in validity to educators' interests in teaching people how to think, exciting new developments are possible.

Finally, to live is to adapt; to adapt is to learn. To instill a passion for learning is to instill a passion for living. This level of cognition is not easily conveyed simply by more detailed work in the disciplines, for that only leads one further into the discipline. What

is wanted is an examination of how the disciplines assist in developing the individual. Jan Blits (1985) puts it well when he says:

> Liberal education aims to prepare young people for an intelligent life. Its most important goal is to teach them to become thoughtful about themselves and the world, about their actions and their thoughts, about what they do, what they say, what they want, and what they think. It seeks to illuminate life, and particularly to clarify the fundamental human alternatives, by delving as deeply as possible into the roots of things. Liberal education is thus essentially a recovery or rediscovery of root issues and origins.

The liberal arts must give explicit attention to these root issues and origins. At a minimum, students should take about five semester courses in areas where the roots of education can be examined--areas such as problem solving, choice, ethical and social development, and critical reflection. However, alternatives to traditional course work must also be devised. Jointly taught courses and interdisciplinary projects supervised cooperatively by liberal arts and teacher education faculty, for example, could be employed. The point is that the area of higher order skills and competencies provides an opportunity for integrating the concerns of the liberal arts with the more professionally oriented concerns of teacher education.

CONTENT

Elementary Education

Historically, the liberal arts have contributed least to the content of elementary education. This is easy to understand when one considers that elementary education tends not to be departmentalized, i.e., in today's schools a single elementary teacher is responsible for all aspects of the curriculum in his or, more usually, her classroom. Furthermore, unlike secondary schools, the "subject matter" of elementary education is typically not organized in ways comparable to

the disciplinary organization imposed by liberal arts colleges and universities and adopted by secondary schools. The elementary school teacher must deal with reading, beginning writing (even penmanship), basic arithmetic, social studies, health, science, physical education, art and music--all in addition to human development.

In what follows we assume that the elementary classroom will continue to be organized much as it is today, with the individual teacher responsible for a broad range of areas. This assumption could, however, be questioned and the difficulties surrounding teacher preparation in elementary education might be significantly alleviated were we to introduce changes in the structures of elementary classrooms. Just as one example, teams of elementary teachers could be formed with some team members expert in mathematics and science and others expert in reading and language arts. Such a change might alter the necessity for a single teacher to know everything -- a necessity not easily honored as we will see.

As a general observation, elementary schools are primarily concerned with imparting the prerequisite tools and skills for learning, rather than with the actual learning of organized bodies of knowledge. The liberal arts, on the other hand, concentrate almost exclusively on those bodies of knowledge. Consequently, the preparation of elementary teachers is usually found in schools and colleges of education, rather than in liberal arts colleges. Elementary teachers sometimes take up to 50 percent of their courses in education and most often receive their degrees in education. In contrast, the proportion of courses in education that a secondary education teacher takes is usually about 20

to 25 percent of the total in a bachelor's program, and the degree is usually taken in a regular academic major.

The issue of the appropriate contribution of the liberal arts to the content preparation of elementary school teachers is extremely troublesome. On the one hand, there are those who would argue that the lack of disciplinary structure in elementary schools is simply a historical accident of the normal school approach to teacher training. Advocates of this approach would point to the slighting by elementary teachers of content areas in which their own preparation was meager. In other words, elementary teachers who had little or no mathematics in their education do not teach elementary mathematics very much or very well. The remedy, so this line runs, would be to insist on rigorous and appropriate disciplinary training for elementary school teachers with at least the possibility of imposing disciplinary structures on elementary classrooms. Or, perhaps, interdisciplinary majors composed of appropriate parts of the disciplines for which elementary teachers are responsible could be developed.

On the other hand, there are those who would argue that the development of young children is incompatible with the imposition of a disciplinary structure on elementary education. Advocates of this view suggest that, until about the middle grades, children are largely unable to grasp material cast in the logical structure of a discipline. Philosophically and historically, it is argued that conceiving of the liberal arts as consisting primarily of disciplinary study is, in any case, overly narrow. It reflects the Germanic tradition of the research university and ignores the earlier liberal tradition of attention to the development of compassionate, caring, concerned, and connected human beings--of the development of character and an inquiring mind. Indeed,

the most trenchant contemporary criticisms of the disciplines, even at the collegiate level, have to do with this tendency to fragment learning. The remedy, so this line runs, is to extend the integration found in elementary classrooms upwards.

Nor is it easy, in practical terms, to compromise. Let us assume the current structure of elementary schools and insist that elementary teachers acquire at least a minimum of disciplinary knowledge in each of the areas for which they are responsible. If we further insist that elementary teachers acquire specialized knowledge of how young children learn and become compassionate, caring, concerned, and connected people, we are potentially asking more of elementary teachers than secondary teachers or even college professors--an unrealistic, albeit interesting, idea.

It is essential to appreciate the fact that two quite different conceptions of liberal education as a whole are represented in the question of the contribution of the liberal arts to elementary education--the disciplinary vs. the personal development conceptions of liberal education. We cannot settle this opposition within the confines of our report. Therefore, we recognize the existence of both of these conceptions and attempt to outline below several of the more reasonable approaches emanating from each of them. We hope that as various alternative approaches to elementary education are attempted and evaluated, further advances in the larger debate may be indicated.

We will examine three main ways in which the liberal arts can contribute more directly to the preparation of elementary school teachers. First, new liberal arts majors can be developed, primarily in psychology and language arts. Second, regular academic majors and

minors can be required. Third, introductory courses that get at the basic structure and content of the elementary school curriculum can be developed.

New Liberal Arts Majors

One of the liberal arts majors that might be appropriate for elementary teachers would be in child and developmental psychology. Some existing psychology programs come close to this idea already, but most have not been designed with the elementary school teacher in mind. Such a major would stress studies in child development, exceptional education, counseling, tests and measurements, learning theory, and cognate areas. This type of program would better prepare an elementary teacher for the demands of dealing with rapidly changing and maturing youngsters than most traditional disciplines, although special attention would have to be paid to ensuring competency in the content taught in the elementary grades.

Another kind of content area, not widely found in the liberal arts, which would make a good deal of sense as a major field for elementary teachers, is communication and language arts. This field would include writing, psychology of reading, applied linguistics, the structure of language, children's literature, speaking and listening, and similar courses. Few, if any, such majors now exist, especially in the liberal arts; however, intellectually rigorous and challenging programs of this type can and should be developed jointly by liberal arts and education faculties. Communication and language arts development are perhaps the critical goals for elementary education along with the acquisition of elementary mathematical concepts. Teachers who do not know the basics in these areas will probably not be able to help young children acquire these skills.

Regular Academic Majors and Minors

Regular majors and minors might be required of elementary teachers. A scheme requiring that elementary teachers major in a subject taught in the elementary schools and minor in the others would put a difficult burden on scheduling, but would address the concern that many elementary teachers give short shrift to areas in which they have had little training. An emphasis on the disciplines at the elementary level runs the risk of conflicting with the developmental needs of young children, but disciplinary expertise may be able to be set in a context of appreciation for the needs of elementary age children. Indeed, it might be argued that a truly liberal education would automatically teach the discipline in a way that leads to personal growth and development. However, as noted above, few disciplinary courses do so now.

New "Pedagogical Content"

The third major area in which the liberal arts might contribute to the content preparation of elementary teachers is related to, but is different from, the straightforward disciplinary major and minor approach noted above. Elementary teachers must deal with an extremely broad range of topics. Although the language arts are central, many other areas are important--mathematics, science, social studies, health, and in some cases foreign languages. Whatever the major of an elementary teacher, in education or the liberal arts, attention must be given to the wide range of content area to be covered in the elementary grades.

Given the introductory nature of most elementary school subjects, it is probably not necessary for teachers to acquire a collegiate major

or even a minor in each of the subject areas, but carefully designed basic courses are essential. Such courses must ensure that elementary teachers really are acquainted with the appropriate content they must teach rather than with advanced esoteric topics in the discipline. Although elementary in one sense, such content can easily be placed in the context of a college level course if attention is paid to the logical and disciplinary structures in which the content is found and the extent to which those structures contribute to methods for teaching the content to young children.

Lee Shulman (1986) has coined the phrase, "pedagogical content knowledge" to refer to this area. These would not be standard courses in "mathematical methods", for example, but would rather concentrate on such things as the most central and powerful concepts, metaphors, and methods of discovery and validation in mathematics itself. Such knowledge would also add to the understanding of the major learning problems students of a variety of ages tend to have in understanding those concepts, metaphors, and methods. Cooperative efforts between education faculty and liberal arts and sciences faculty could be most helpful here.

Secondary Education

As should be apparent by now, a great deal of the liberal arts is relevant to teacher preparation long before one gets to the oft-cited requirement that, for example, a biology teacher must know biology. The relevance of disciplinary content areas for secondary teachers is obvious and, as far as we are concerned, non-controversial. Every secondary school teacher should major in the discipline he or she is going to teach, receiving a bachelor's degree in that field, along with an appropriate minor. This is the norm now and at a minimum it should be

continued. The typical major in a discipline takes about three semesters and provides the depth of knowledge in a field that allows the teacher to adapt to unexpected, but inevitable, classroom contingencies that begin to occur at the secondary level. Even if an advanced course in a major is never taught *per se* at the secondary level, that knowledge can help to provide the background for understanding what *is* taught.

To note that most secondary teachers do major in the disciplines they teach is not, however, to suggest that all is well with secondary education. As noted earlier, all too often an emphasis on the disciplines comes at the expense of ignoring the more humane goals of liberal education. Secondary teachers need to care about the kinds of total human beings their students are becoming as much as they care about their disciplines.

A *good* general education for secondary teachers will address this concern in part, but more needs to be done. Even more than mere majors in a discipline, teachers need to be aware of the fundamental structure of their discipline. They also need to know what and how the various disciplines contribute to human understanding, how they fit together, and when some are appropriate and when others should be employed. Thus, the notion of the *structure of a discipline* is key to understanding the most exciting new contribution the liberal arts could make to teacher education. Furthermore, that structure must be understood as encompassing not only the logical, conceptual structure, but also the structure of human needs and activities that give rise to the disciplines in the first place.

STRUCTURES OF KNOWLEDGE

Neither elementary nor secondary teachers need to know all of the technical details of a discipline required of the practitioners of that discipline. They would, however, profit enormously from understanding the various ways of knowing which human beings have developed and which are reflected in the basic structures of the disciplines. For example, scientific method and processes of discovery, inference, and justification are crucial for understanding science; the ideas of counting, correspondence, and operation are central to mathematics; and so on. However, it is not obvious that the structure of a discipline can be learned only, or even at all, simply by learning more and more of the content of the field. The challenge is to design courses in the various disciplines that can help teachers understand the concepts, methodologies, and criteria of validity in each field and discipline and allow them to place their own specific teaching in these contexts. Thus, not only should teachers generally learn more than they will teach, they should learn the structure or philosophy of what they teach.

The need for study in the structure of the disciplines is equally as important for secondary teachers as it is for elementary teachers. Understanding the structure of their fields would enable secondary school teachers to plan their lessons taking into account both the logic of the discipline as well as the needs and capacities of their students. They would be better able to diagnose student difficulties and propose appropriate activities if they had an overall cognitive "map" of their disciplines.

Thus, the liberal arts need to provide prospective teachers with a knowledge of the structure of the disciplines. The teacher, elementary or secondary, must be aware of the fundamental concepts, methods of

discovery and validation, major findings and theories, and how they all fit together. Only with such knowledge can teachers make intelligent choices of how to provide young people access to these fields. Courses in the structure of a discipline are too seldom found and yet they are a critical part of an ideal teacher preparation program. Several such courses should be required for all prospective teachers.

METHODS OF TEACHING

Ideally "methods" courses should be the most intellectually challenging and exciting part of the teacher education curriculum. Too often, they are nothing but "bags of tricks" or anecdotal reflections. The question is not whether students will learn how to teach but rather how they will learn how to teach, for even if we eliminated methods courses, students would revert back to how they were taught, pick up hints in the teachers' lounge, or perhaps just read the textbook out loud.

The challenge is to make of methods courses what they could and should be. What has been learned in the content area, including the structure of that content area, the principles of child development and learning theory, the social context of education, along with compassion, caring, and concern must be connected with instructional and management strategies that fit the ever-changing circumstances of the classroom. The teacher must draw upon the higher order skills of problem-solving, critical thinking and human concern to decide when and how certain aspects of the discipline should be presented to students who have different needs, motivations, and backgrounds. Teachers must be brought to reflect on and critically evaluate their teaching performance. What really happened in class today? Why did that example work? Would such

and such a strategy have been better suited to get at that concept? Can these students grasp the point of this lesson without first understanding that? No more potentially exciting experience exists than to have a content area professor, an education professor in the area, a master cooperating teacher, and a group of student teachers sit down and critically analyze, evaluate, and improve real teaching practice.

The "logical" structure of a content area is not necessarily the best "pedagogical" structure as the problems with "new math" taught us. Methods courses must deal with the interaction of the logical structure derived from the disciplinary experts in the liberal arts and the pedagogical structure derived from the experts in education in the context of human and humane relationships. We conclude that the liberal arts can contribute to improving general cognitive skills and content. Of even more importance, however, is their potential contribution to improving the methods of teaching.

A FIVE YEAR PROGRAM

We have argued that the contributions of the liberal arts to teacher preparation should be closely integrated with the teacher education curriculum. The higher order skills and competencies, the structure of the disciplines, the academic majors for elementary teachers, and especially jointly developed methods courses all imply the integration of the liberal arts and professional education. Unlike other professions such as law and medicine, the content of the liberal arts is inextricably entwined with the very purposes of education. Thus, an integrated teacher education program appears to be called for. The curriculum for such a program has been suggested in the preceding sections of this paper.

To implement this curriculum, it is apparent that five years of course work are essential. The additions made to current typical undergraduate programs have come in quite new contributions from the liberal arts. Special attention has been given to higher order skills, to work in the structure of the disciplines, and to joint work with education faculty on methods courses that will tie together content, skills, professional education and the structure of the disciplines. In short, the liberal arts must contribute more to teacher education, but not simply through increasing the hours required in traditional majors. Indeed, with the exception of a few teachers who teach college level courses in high school, there seems to be no demonstrable connection between more content knowledge and better student performance. On the other hand, many teachers have been justly criticized for a lack of basic and higher order skills and for the inability to relate the essentials of their disciplines to the capacities of elementary and secondary students. Furthermore, the knowledge base underlying general pedagogical knowledge has increased dramatically in recent years strengthening the case that we can and must teach people how to teach.

Some advocates of a five-year teacher education program argue for a baccalaureate followed by a fifth professional year of educational studies. Such a proposal fits far more easily into the existing models of liberal and professional education than does an integrated program, such as the one proposed here. In either case, a proper appreciation of the role of the liberal arts in teacher preparation combined with an acknowledgment of the indispensable role of professional preparation leads to the conclusion that initial teacher preparation almost certainly will require a minimum of five years.

There are, of course, a myriad of problems associated with actually implementing a five-year teacher training program. Such programs may or may not be wise policy, all things considered. Our point is simply that if the liberal arts are to play their proper role in teacher preparation, and we do not slight professional preparation, it will take five years.

COOPERATION AND CONTROL

The foregoing analysis leads to the obvious need for close cooperation between education faculty and liberal arts faculty in the design of programs of teacher education, whether these programs are integrated five-year programs or fifth professional year undertakings. Indeed, the joint design of courses and experiences in the higher order competencies, structure of the disciplines, and methods of teaching could well prove to be a model for bringing some coherence and integrity to the college curriculum as a whole. Individual disciplines have proven to be extremely effective ways of promoting the growth of knowledge in general. They may be less effective in promoting the growth of an individual's knowledge and ability to deal with the world. However, if the disciplines can be integrated into a coherent curriculum which pursues the goals we have outlined above, they can be a very powerful liberating force and extremely important for teachers at all levels.

The mechanisms for such cooperative efforts can be many and varied. Three seem particularly appropriate. Of primary importance are joint curriculum committees composed of liberal arts and education faculty. Such groups could examine issues of general education, basic and higher

order skills, and the structure and methods for teaching the disciplines. Both education and the liberal arts would profit. Second, joint teaching of several segments of the curriculum should also be attempted. In particular, courses in educational problem-solving, structure of the disciplines, and methods of teaching are likely candidates for joint efforts. Third, joint faculty appointments between education and liberal arts departments would be potentially useful.

Most institutions should also establish a campus-wide advisory committee on teacher education. Such a group could be helpful in reviewing the more specialized curricular proposals noted above. It could also assist in evaluating the total program and in making recommendations for improvement based on such evaluation. Such a group could also help review the many state and local tests being required of teachers and advise the various campus constituencies on their responsibilities for different aspects of the tests. Such advisory groups could also help plan for supply and demand issues, such as required courses and so on. Of course, teacher education programs should have field-based advisory groups of teachers and administrators as well.

A campus-wide body should not, however, be given control of the granting of degrees or certification in education. Indeed, the final control of teacher education, whether it be for certification or degrees, must rest with the education faculty. Every other university-based professional school of which we are aware maintains final control over its own curriculum and degree programs. Colleges of Engineering and Management typically give their own degrees. Medicine and Law often require undergraduate degrees, but control their own separate programs. We see no persuasive argument for treating education any differently.

Even with highly integrated programs, education faculty can exert control at several points. A few courses, e.g., the structure of the disciplines, might be open to all students, but admission to the education portion of the program would require a formal application. At a minimum, applicants should have demonstrated a minimal competency in the basic skills, especially in verbal, written and mathematical areas. Teacher education units must also be responsible for appropriate evaluation during and at the conclusion of the professional education experience. These evaluations must include not only an assessment of the abstract knowledge required of a teacher, but of the personal and practical skills required to teach our nation's young.

The insistence on autonomy for teacher education programs comparable to that for other professional schools does not, of course, mean a lack of accountability. Regular university evaluation procedures, especially those involving external peer review, should be applied to teacher education units. The results of such evaluation should be used to improve or eliminate sub-standard programs. The point is that a sufficient knowledge base is present in education to allow for the responsibility for teacher education to be vested in the college of education. Along with that responsibility, of course, goes the accompanying accountability.

In summary, cooperative efforts of liberal arts faculties and professional educators are needed to design programs of teacher preparation, programs leading to the awarding of both a bachelor's degree in an academic field and a master's degree in education at the end of five years. If we succeed in this effort, we can both improve teaching in elementary and secondary schools and promote the long-standing goal of educating liberally as many of our citizens as possible.

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